PATENT
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REMARKS

In the Office Action under reply, claims 1-18, all the claims present in this application, were rejected in view of published U.S. application 2001/0021151 (Verboom). In particular, Verboom was applied as an anticipatory reference against claims 1-3, 5, 6, 8-12, 14, 15, 17 and 18; and was relied upon to reject claims 4 and 13 as allegedly being obvious. Verboom was combined with published U.S. application 2002/0023243 (Tomita) to reject claims 7 and 16 as allegedly being obvious.

Clearly, the basis for the Examiner's rejection of the claims hinges upon a proper understanding of Verboom. As will now be described, Verboom is significantly different from Applicants' claimed invention and, thus, fails to provide sufficient teachings to one of ordinary skill in the art to anticipate or render obvious any of Applicants' claims.

At the outset, it is recognized that Verboom refers to inter-symbol interference; and although the present invention likewise finds ready application to inter-symbol interference, there is a marked difference between Verboom's treatment of inter-symbol interference and the manner in which Applicants' claimed invention treats inter-symbol interference. Verboom compensates a data channel for the effect of inter-symbol interference therein, resulting in an improved level of reliability from that data channel. On the other hand, Applicants' invention operates to identify and quantify inter-symbol interference in order to measure it. Once measured, the contribution of inter-symbol interference to measured jitter can be identified and quantified. It cannot be overstated that Applicants do not attempt to remove the effect of inter-symbol interference -- rather, they simply identify inter-symbol interference contributions from non-inter-symbol interference contributions, thereby providing a more complete and accurate insight or estimate of the breakdown of the jitter component contributions.

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Applicants also point out that although Verboom describes a slicer 410 (Fig. 4), Verboom's slicer is a classical slicer to determine whether a waveform is a "1" or a "0" depending upon whether the waveform is above or below a slicing level. In contradistinction, Applicants' slicer slices sampled data sets into horizontal data sets that are related in time. That Applicants' slicer differs from Verboom's classical slicer is evident from, for example, Applicants' claim 1, which recites, "slicing said stored data signal into a plurality of data segments of a predetermined length."

Turning now to the Examiner's rejections, and in particular, to the rejection of claim 1, it is respectfully submitted that, contrary to the Examiner's interpretation of the reference, Verboom fails to teach the following limitations recited in claim 1:

"Acquiring a data signal... for a predetermined period of time."

In Verboom, the data signal that is "acquired" is read from a storage device, it is either a digitized signal 202 or a digitized read analog signal (see, for example, paragraph [0070] and paragraph [0084]). There is, however, no suggestion in Verboom, and particularly at the locations identified by the Examiner, of acquiring a data signal "for a predetermined period of time."

"Storing said data signal into memory."

The Examiner identifies registers 602, 604, shown in Fig. 6A of Verboom as constituting a memory in which the acquired data signal is stored. However, Verboom describes these registers as simply imparting a 1-bit delay to the digitized signal for the purpose of permitting channel bits that are a predetermined distance from one another to be compared (see the penultimate sentence in paragraph [0091]). Clearly, a 1-bit delay circuit is not a "memory," as claimed.

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"Recovering a clock signal from said stored data signal."

Paragraph [0069] of Verboom describes Fig. 2, which shows a channel clock 204. This channel clock is not recovered from the stored, acquired signal, as is specified in Applicants' claim 1. Indeed, if the Examiner's argument is followed, Verboom's clock must be recovered from the 1-bit delayed signal that appears at the output of register 602 or 604. This clearly is not the case; and it must be emphasized that Verboom does not recover a clock signal from the stored, acquired data signal.

"Slicing said stored data signal into a plurality of data segments of a predetermined length in accordance with said recovered clock signal."

In applying Verboom to this limitation recited by Applicants' claim 1, the Examiner relies upon slicer 410, shown in Verboom's Fig. 4 and described at paragraphs [0091-0094]. But, as mentioned above, slicer 410 does not slice the delayed input signal from 1-bit delay 404 into segments of _predetermined length_. This is evident from Figs. 5A-5P, which show 2T marks and spaces, 3T marks and spaces, and long marks and spaces (see, in particular, paragraphs [0094-0131]). Consequently, the marks and spaces produced by slicer for 10 are not "data segments of a predetermined length."

"Synchronizing each of said data segments to align them to a frame or predetermined pattern to determine a bit error rate thereof."

Admittedly, Verboom mentions frames in his disclosure. However, as stated in Verboom's paragraph [0034] these "frames" are the frames of one or more fields recorded in a track on a disk. These are not frames to which each data segment of predetermined length is aligned, as recited in Applicants' claim 1. Nor does Verboom suggest that data segments should

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be aligned to a predetermined pattern. Finally, Verboom fails to "determine a bit error rate" of

the data segments.

"Comparing each of said data segments to said predetermined pattern on a bit by

bit basis."

The Examiner refers to paragraphs [0007]-[0092] as allegedly describing this comparison

feature recited by Applicants' claim 1. It is respectfully submitted however that Verboom fails to

compare, on a bit by bit basis, a data segment to a predetermined pattern.

Therefore, since Verboom fails to describe all of the limitations recited by Applicants'

claim 1, it is respectfully submitted that Verboom does not anticipate claim 1. Consequently, the

withdrawal of the rejection of claim 1 as being anticipated by Verboom is respectfully requested.

Claims 2, 3, 5, 6 and 8 all depend, either directly or indirectly from claim 1.

Accordingly, these dependent claims include all of the limitations recited by claim 1; and for at

least this reason alone, these dependent claims are patentably distinct over Verboom.

Claim 10 is an independent claim directed to the apparatus that performs the method

recited by claim 1. Claim 10 includes substantially the same limitations as are recited in claim 1.

Therefore, claim 10 is patentably distinct over Verboom for the very same reasons that have been

discussed above.

Claims 11, 12, 14, 15, 17 and 18 all depend, either directly or indirectly from claim 10.

Since these dependent claims include all of the limitations recited by independent claim 10, it is

respectfully submitted that these dependent claims are likewise patentably distinct over

Verboom; and the rejection thereof should be withdrawn.

Claims 4 and 13 were rejected as being obvious in view of Verboom. But, claims 4 and

13 depend from claims 1 and 10, respectively, and the limitations of claims 1 and 10, which are
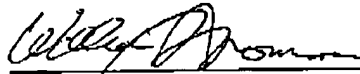
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not found in Verboom, but which are included in claims 4 and 13, distinguish these dependent claims from Verboom. Moreover, the differences between these limitations and Verboom clearly are not obvious. Consequently, the rejection of claims 4 and 13 should be withdrawn.

Claims 7 and 16 were rejected as being obvious in view of the combination of Verboom and Tomita. But, Tomita fails to cure the deficiencies of Verboom, as discussed in detail above. Hence, the addition of Tomita to Verboom, even if proper (which Applicants' representative disputes), fails to render claims 7 and 16 obvious. Accordingly, the withdrawal of the rejection of these claims is respectfully solicited.

Statements appearing above in respect to the disclosures in the cited references represent the present opinions of the undersigned attorney and, in the event the Examiner disagrees with any of such opinions, it is respectfully requested that the Examiner specifically indicate those portions of the references providing the basis for a contrary view.

Please charge any additional fees that may be needed, and credit any overpayment, to our Deposit Account No. 50-0320.

Respectfully submitted,
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